ANNUAL REPORT TO THE CALIFORNIA LEGISLATURE FOR THE YEAR 2006

THE CALIFORNIA OIL TRANSFER AND TRANSPORTATION EMISSION AND RISK REDUCTION PROGRAM 2004 to 2009

Prepared by the California State Lands Commission
April 2007

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Oil Transfer and Transportation Emission and Risk Reduction Act of 2002, Public Resources Code Sections 8780 through 8789, (Act) established the California Oil Transfer and Transportation Emission and Risk Reduction (OTTER) program under the direction of the California State Lands Commission (CSLC). The Act requires the CSLC to file a report with the legislature summarizing the information collected under the program. The copy of the Act is in Appendix A.

The OTTER program collects data related to the "internal shipment of oil" by marine vessels between facilities in the San Francisco Bay area and the Los Angeles/Long Beach area as defined by the Act (§ 8782(d)). The legislature found that current, accessible and accurate data regarding oil transportation is critical to having adequate information of the potential environmental quality, public health, and environmental justice consequences that must be analyzed. The information can be used by state and local agencies, for environmental impact reports and statements, emergency response planning, permit issuance, and air quality mitigation efforts. It also declared that tracking trends in internal shipment of oil is necessary to promote public safety, health, and welfare, and to protect public and private property, wildlife, marine fisheries, and other ocean resources, and the natural environment in order to protect and to preserve the ecological balance of California's coastal zone, coastal waters, and coastal economy.

To gather the necessary data as defined in the Act the CSLC was directed to develop the "Oil Transfer and Transportation Emission and Risk Reduction (OTTER) Form" to be completed by the owner of the oil involved in the internal shipment of oil. The form was developed and has been used by the responsible parties. The OTTER Form can be found in Appendix B.

The CSLC is required to aggregate the OTTER information and provide it to the legislature in the form of annual reports for the years 2004 through 2009. The report is to discuss trends, provide specific information on air emissions and vessel types used as well as the number of transfers related to the shutdown of refineries.

This is the third in a series of annual reports to the legislature. The first and second annual reports to the California Legislature were prepared in April 2005 and April 2006 respectively. These reports can be accessed at:
http://www.slc.ca.gov/Division_Pages/MFD/MFD_Programs/OTTER/OTTER.htm

After the submission of the second annual report in April 2006, thirteen late reports were submitted to CSLC on May 22, 2006. The aggregates of shipments including these late reports were also published as an addendum to the second report. The addendum is in Appendix C to this report. This report uses the updated statistics of the year 2005.

OTTER report forms for the year 2006 indicate:

Total number of internal voyages:	381
Number of voyages from San Francisco Bay Area to Los Angeles/Long Beach:	295
Number of voyages from Los Angeles/Long Beach to San Francisco Bay Area:	65
Number of voyages from Ellwood to Long Beach:	14
Number of voyages from Ellwood to San Francisco Bay Area:	7

Total volume of crude oil shipped as internal shipments:	1,311,960 barrels
Total volume of refined oil shipped as internal shipments:	35,585,829 barrels

All internal shipments of crude oil in 2006 were from the Elwood marine terminal, off the Coast of Santa Barbara County.

Total air emissions resulting from internal shipments of oil:

NO_x emission:	1,341.44 short tons
HC emissions:	68.55 short tons
PM emissions:	55.44 short tons
CO emissions:	199.75 short tons

During the year 2006, there were no internal shipments reported due to refinery breakdowns.

The Act also required CSLC to report the amount and location of ballast discharge in the event that Sections 71200 through 71271 of the Public Resources Code are repealed. The Marine Invasive Species Act of 2003 has been reauthorized and it enhances the state's program to prevent the introduction of non-indigenous aquatic nuisance species through vessel's ballast water discharges. This report therefore contains no information regarding the discharge of ballast.

A percentage change in trends of key indicators from the data for 2004, 2005 and 2006 is summarized in the table below:

Key indicators in percentages	**2004 to 2005**	**2004 to 2006**	**2005 to 2006**
Number of voyages	13.97	4.38	-8.41
Volume of oil shipped as internal shipment	17.93	8.29	-8.17
No_x emissions	4.69	13.22	8.15
HC emissions	6.46	14.30	7.36
PM emissions	-10.81	-33.28	-25.20
CO emissions	-8.73	13.55	24.42

There have been upward trends in the Nitrogen Oxide (NO_x), Hydrocarbon (HC) and Carbon Monoxide (CO) emissions. Particulate Matter (PM) is showing a downward trend.

Even though there was a reduction in the number of internal shipments in 2006 in comparison to the previous year, there was an upward trend in emissions with No_x having 81% share followed by CO at 12%, HC at 4% and PM was the least at 3% of the total emissions.

There was an 8.41% reduction in the number of internal shipments by sea in 2006 in comparison to the data of 2005. This translated to 35.71% decline in the voyages of tank ships and 1.51% decline in the voyages of barges. In 2006 tank ship voyages averaged 35.48 hours and barge voyages averaged 64.85 hours between San Francisco Bay area and Los Angeles/ Long Beach area. In 2005 the average time was 33.27 hours and 60.41 hours respectively. It is possible that the increase in the voyage times in 2006 led to the increase in emissions despite fewer voyages. The OTTER program does not capture specific data that could reveal the reason for change in voyage durations. Total emissions are determined by the duration of the voyage.

All tank ships and some barges, sail more than 25 miles from the coast. Most of the barges sail 12 to 15 miles from the coast using the internationally recognized Santa Barbara Channel Traffic Separation Scheme. 67% of the internal shipments were 12 to 15 miles from the coast and 33% of the shipments were more than 25 miles from the coast. This trend has remained unchanged since 2005.

The data shows that approximately 86% of internal shipments of oil were by barge and 14% were by tank ship in the year 2006. There is a declining trend in use of tank ships and a rising trend in use of barges in internal shipments.

The OTTER form does not capture information if the tank ships and tugs are retrofitted with new engines and use cleaner fuels. The emissions during loading and unloading of oil from the tank vessels are also not reported on the form.

Conclusion

The OTTER program captures data about a small but significant segment of air emissions along the coast of California. The trends show more shipments are taking place by barges, 12 to 15 miles from the coast, than by tank ships which sail more than 25 miles from the coast. There were no shipments reported due to refinery shutdown. The trends indicate an increase in most emissions except PM.

PURPOSE OF THE PROGRAM

The Oil Transfer and Transportation Emission and Risk Reduction Act of 2002, Public Resources Code Sections 8780 through 8789, (Act) established the California Oil Transfer and Transportation Emission and Risk Reduction (OTTER) program under the direction of the California State Lands Commission (CSLC). The Act requires the CSLC to develop a program to implement the requirements of the Act.

The purpose of the OTTER program is to collect data related to the internal shipments of oil by marine vessels between the San Francisco Bay area and the Los Angeles/Long Beach area. The legislature found that current, accessible and accurate data regarding oil transportation is critical to having adequate information of the potential environmental quality, public health, and environmental justice consequences that must be analyzed. The information can be used by state and local agencies, for environmental impact reports and statements, emergency response planning, permit issuance, and air quality mitigation efforts. It also declared that tracking trends in internal shipments of oil is necessary to promote public safety, health, and welfare, and to protect public and private property, wildlife, marine fisheries, and other ocean resources, and the natural environment in order to protect and to preserve the ecological balance of California's coastal zone, coastal waters, and coastal economy.

To gather the required data as defined in the Act, the CSLC was directed to develop the “Oil Transfer and Transportation Emission and Risk Reduction Form” to be completed by the owner of the oil or a designated responsible party engaged in the internal shipment of oil. The form was developed and has been used by the oil owners and responsible parties. The CSLC is required to aggregate the OTTER information and provide it to the legislature in the form of annual reports for the years 2004 through 2009.

INFORMATION REQUIREMENTS

The Act required the CSLC, in consultation with the industry, to develop an Oil Transfer and Transportation Emission and Risk Reduction Form for owners of oil or designated responsible parties to report information regarding the volume and types of oil, the routes and duration of voyages and the estimated quantities of air emissions associated with the internal shipments of oil.

Specifically, the Act requires that the form contain the following:

(1) The name, address, point of contact, and telephone number of the responsible party.

(2) The name of the vessel transporting the oil.

(3) The type and amount of oil being transported.

(4) The source of crude oil.

(5) The name and location of any terminal that loaded the vessel.

(6) The name and location of any terminal that discharged the tanker or barge.

(7) The dates of travel and the route.

(8) The type of engine and fuel used to power the tanker or barge-towing vessel.

(9) The estimated amount and type of air emissions. To the extent practicable, the emissions factors developed by the United States Environmental Protection Agency shall be used to estimate the amount of air emissions. The form shall be designed to ensure that charter vessel air emissions are not counted more than once.

(10) An indication of whether the reason for the internal shipping of oil was due to a temporary shutdown or partial shutdown of a key refinery facility.

(11) On and after January 1, 2004, if Division 36 (commencing with Section 71200) is repealed pursuant to Section 71271, the amount of any ballast discharge and the location of the discharge. (This requirement was not invoked as The Marine Invasive Species Act of 2003 reauthorized and enhanced the state's program to prevent the introduction of nonindigenous aquatic nuisance species through vessel's ballast water discharges).

Prior to the commencement of the reporting of internal shipments of oil, CSLC staff, in consultation with a Technical Advisory Group of industry participants, developed the OTTER form which is shown in Appendix B. Details of the collaboration with industry for development of the OTTER reporting form can be found in the first annual report for the year 2004.

VOYAGE ROUTES

The Act requires the reporting of vessel routes. Tank ships and barges typically travel on routes that are prescribed distances from shore based upon agreements between the oil industry and state government agencies. Most barges travel in the internationally designated Traffic Separation Scheme (TSS) in the Santa Barbara Channel and travel up the coast. On these voyages, tank barges are generally 12 to 15 nautical miles offshore. Most tank ships and some barges travel at a distance greater than 25 miles offshore. For simplicity of reporting it was decided to use the designation "S" for vessels utilizing the Santa Barbara Channel TSS. For the others, "O" is used to designate an offshore voyage. If a different type of route is used, it is to be reported by a notation to the OTTER Form.

THE OTTER DATABASE

The information received by CSLC is entered into an electronic database. At the end of each quarter the information is aggregated and entered into a table. At the end of the year, the table enables staff to prepare the mandated annual report to the legislature. It also allows staff to compare quarterly and annual trends in the internal shipments of oil.

REPORT TO THE LEGISLATURE

The Act requires the CSLC to submit a report to the legislature and to make the report available to other parties requesting it. Annual reports are to be filed with the legislature on or before April 1, each year for the years 2004 to 2009.

The Act requires the Annual Reports to include, at a minimum, the following:

(1) A description of any trends in the total number of trips by oil type, amount of shipment, and source of oil.

(2) The number of transfers due to refinery shutdowns.

(3) The location of air emissions and ballast discharge, and the type of vessel used during those events.

(4) A discussion of any other pertinent issues that the Commission determines should be included.

OIL TRANSFER AND TRANSPORTATION EMISSION AND RISK REDUCTION ACT

STATISTICS FOR 2006

ANNUAL SUMMARY 2006 – VOYAGES

Total number of internal shipment voyages:	381
Number of voyages from San Francisco Bay to Los Angeles/Long Beach:	295
Number of voyages from Los Angeles/Long Beach to San Francisco Bay:	65
Number of voyages from Ellwood to Long Beach:	14
Number of voyages from Ellwood to San Francisco Bay:	7
Number of offshore voyages (O) : > 25 nautical miles from land	94
Number of coastal voyages (S): 12 to 15 nautical miles from land	287

The following table is a compilation of all submitted OTTER information for Calendar Year 2006. The table gives the annual statistical data of the OTTER program.

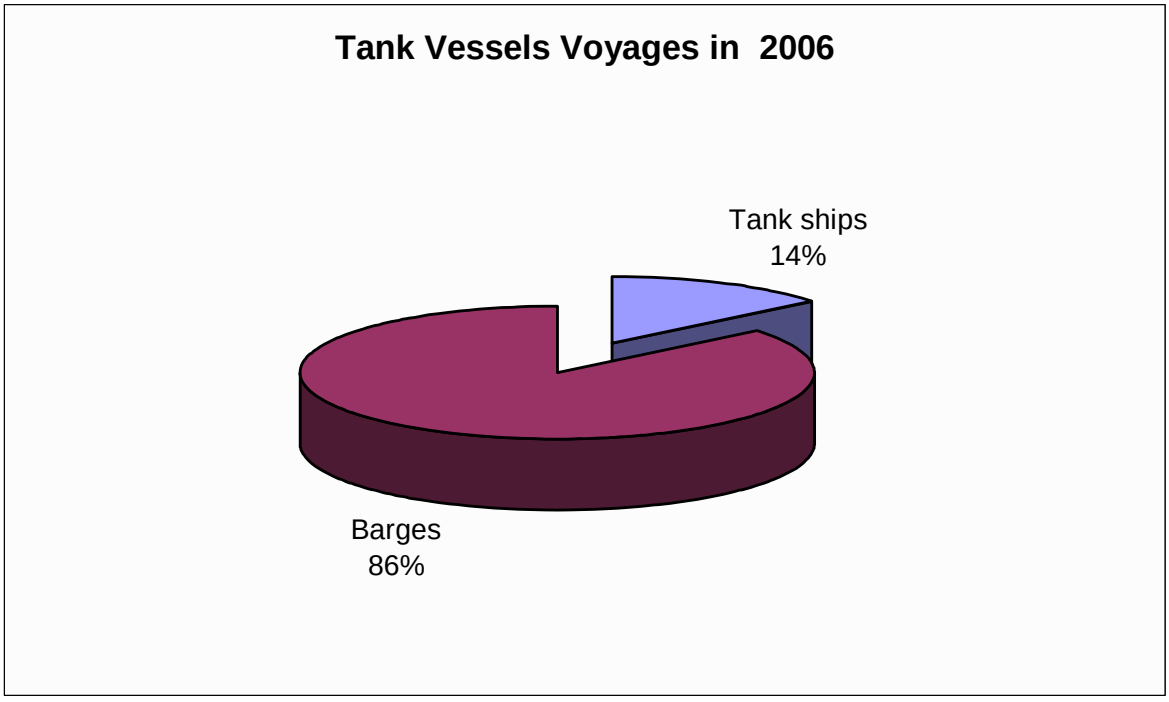
ANNUAL OTTER REPORT 2006

ANNUAL STATISTICS TABLE

Items	1st. Quarter	2nd. Quarter	3rd. Quarter	4th. Quarter	Aggregate Year 2006
Total number of internal shipments of oil	88	99	93	101	381
Number of internal shipments by tanker	11	6	16	21	54
Number of internal shipments by barge/tug	77	93	77	80	327
Number of barrels of crude oil shipped	304,137	324,764	417,882	265,177	1,311,960
Number of barrels of refined oil shipped	7,569,493	8,682,135	9,238,161	10,096,040	35,585,829
Number of barrels of other oil shipped	0	0	0	0	0
Total NO_x emissions in short tons	346.42	363.63	326.20	305.19	1,341.44
Total HC emissions in short tons	17.14	16.16	17.90	17.35	68.55
Total PM emissions in short tons	15.34	9.50	13.34	17.26	55.44
Total CO emissions in short tons	42.93	50.20	59.10	47.52	199.75
NO_x emissions 25 miles from coastline in short tons	36.19	44.90	105.08	87.71	273.88
NO_x emissions 12 to 15 miles from coastline in short tons	310.23	318.73	221.12	217.48	1,067.55
HC emissions 25 miles from coastline in short tons	3.45	2.81	8.58	7.47	22.31
HC emissions 12 to 15 miles from coastline in short tons	13.68	13.36	9.32	9.88	46.24
PM emissions 25 miles from coastline in short tons	7.65	1.76	8.20	12.17	29.78
PM emissions 12 to 15 miles from coastline in short tons	7.69	7.73	5.14	5.10	25.65
CO emissions 25 miles from coastline in short tons	6.37	12.03	32.49	23.46	74.34
CO emissions 12 to 15 miles from coastline in short tons	36.56	38.17	26.61	24.06	125.40
No. of internal shipments because of refinery shutdowns	0	0	0	0	0

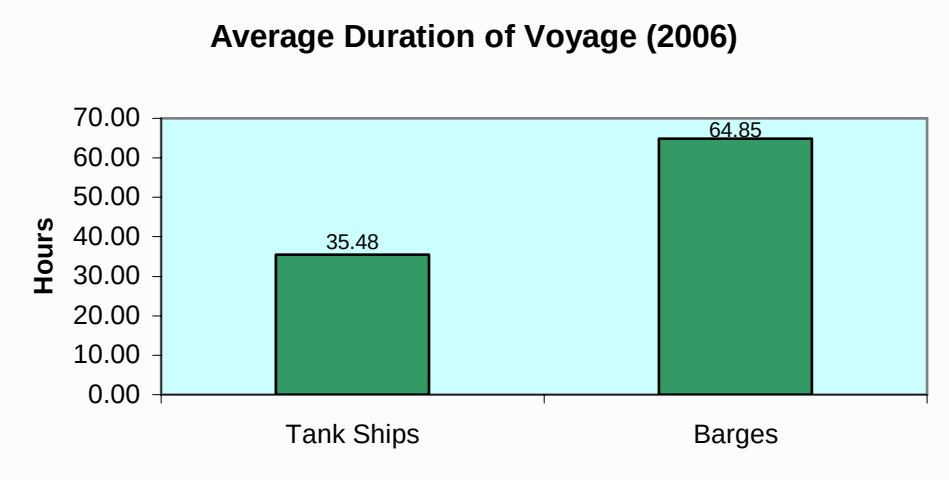
TANK VESSELS VOYAGES (2006)

Total number of internal shipment voyages:	381
Voyages by tank ships:	54
Voyages by barges:	327



The data shows that approximately 86% of internal shipments of oil were by barges and 14% were by tank ships in the year 2006.

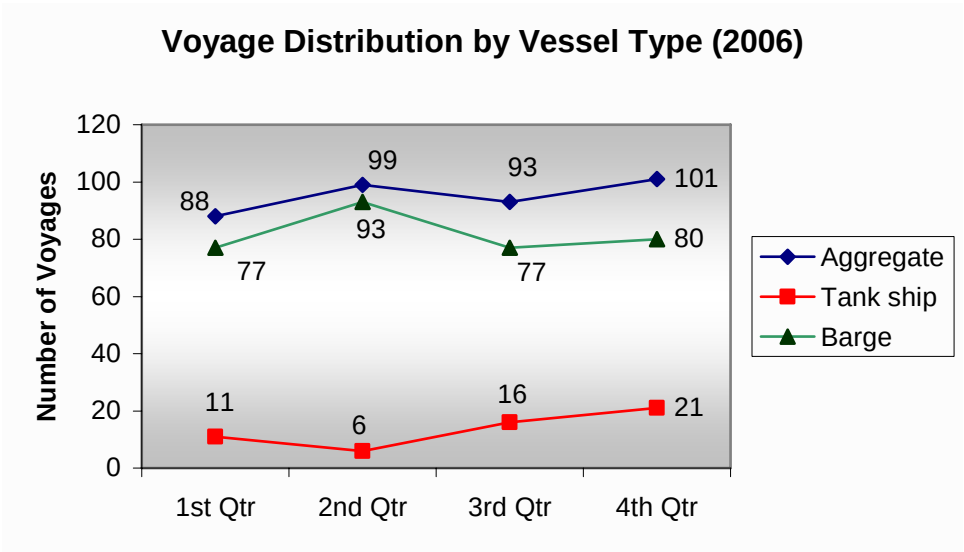
AVERAGE DURATION OF VOYAGE BY TANK VESSELS



The data shows that on an average a tank ship takes 35.48 hours and a barge takes 64.85 hours to complete the voyage between Bay Area and Los Angeles or Long Beach.

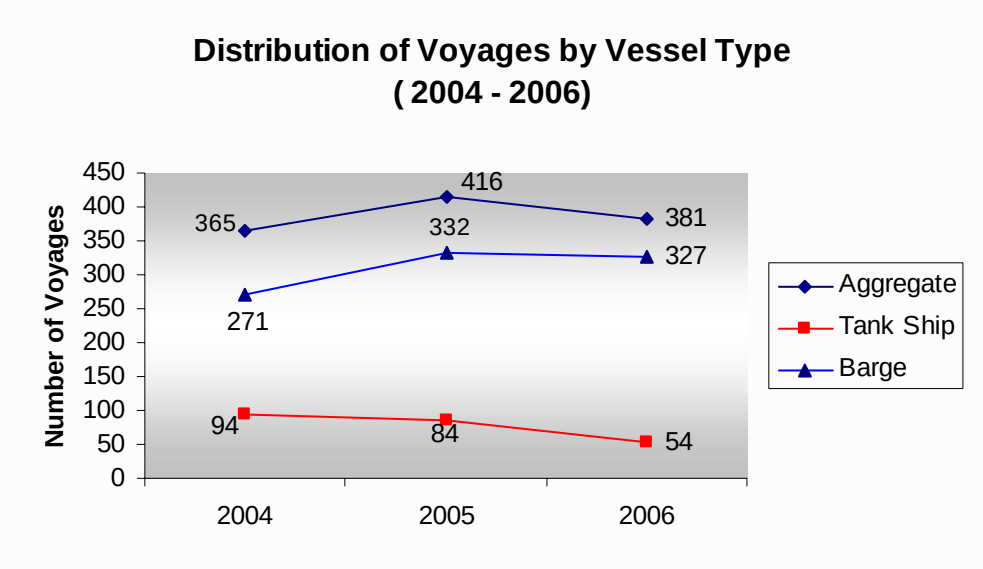
Total emissions are determined by the duration of the voyage.

VOYAGE DISTRIBUTION BY VESSEL TYPE (2006)



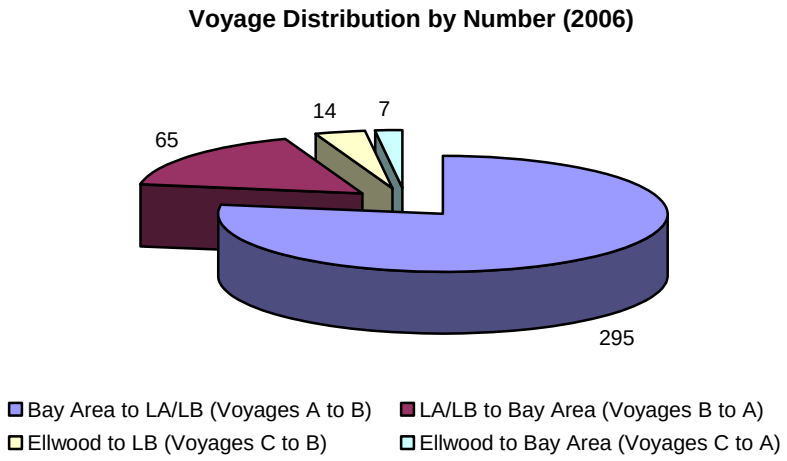
The maximum number of tank voyages was in the fourth quarter and the minimum number was in the second quarter. The maximum number of barge voyages was in the second quarter and the minimum number was in the first and third quarters of 2006.

DISTRIBUTION OF VOYAGES BY VESSEL TYPE (2004 – 2006)



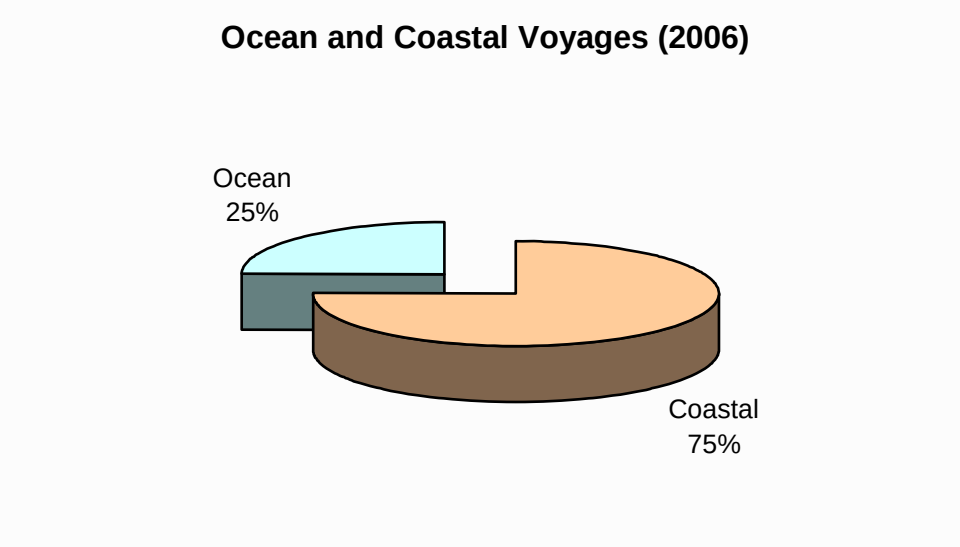
In comparison of the data of 2006 with 2005 there were 35.71% less voyages by tank ships and 1.51% less voyages by barges. When data of 2006 is compared with the data of year 2004 there were 42.55% less voyages by tank ships and 20.66% more voyages by barges.

VOYAGE DISTRIBUTION BETWEEN AREAS IN CALIFORNIA (2006)



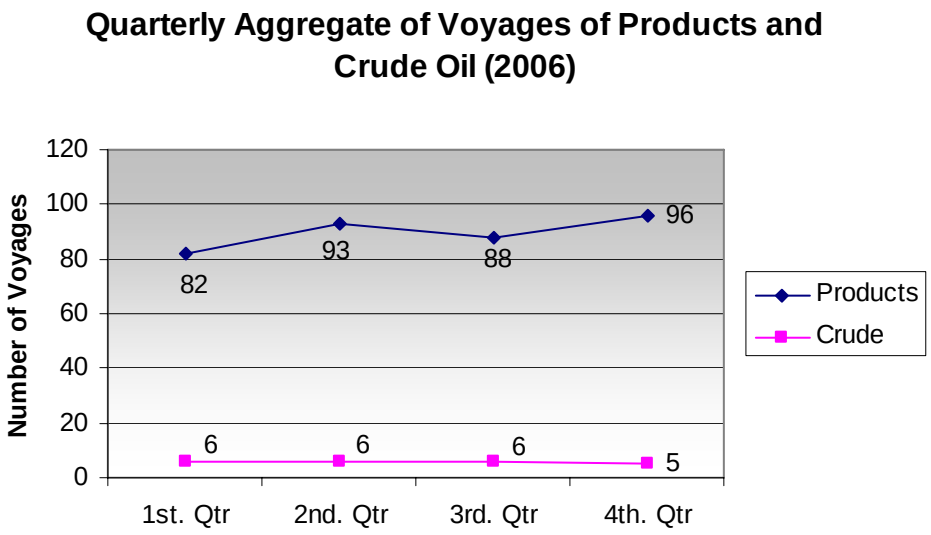
A to B: San Francisco Bay to Los Angeles/Long Beach
B to A: Long Beach/Los Angeles to San Francisco Bay
C to A: Ellwood to San Francisco Bay
C to B: Ellwood to Los Angeles/Long Beach

OCEAN AND COASTAL VOYAGES 2006



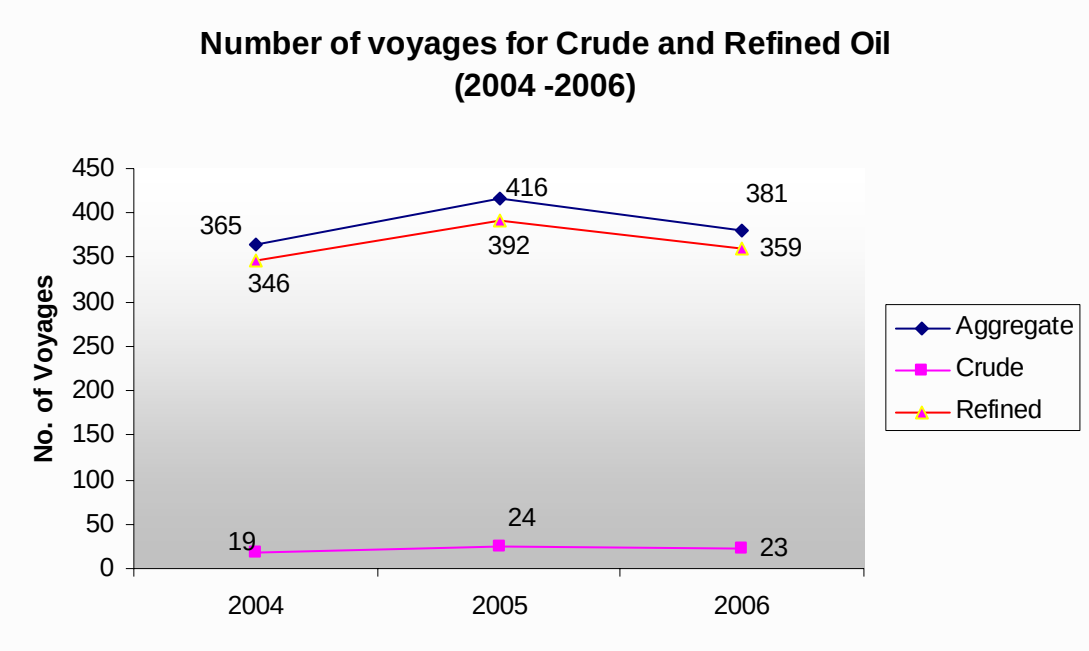
Of the total voyages, 25% were by the offshore ocean route, generally by tank ships. This route keeps the vessel 25 or more nautical miles from the coast. 75% of the voyages were undertaken on the coastal route, 12 to 15 nautical miles from the coast. This route is used by barges.

QUARTERLY AGGREGATE OF NUMBER OF VOYAGES OF REFINED PRODUCTS AND CRUDE OIL (2006)



The number of voyages for the transfer of refined products showed an upward trend, while the voyages for crude oil transfers showed a slight declining trend in 2006.

NUMBER OF VOYAGES FOR CRUDE AND REFINED OILS (2004-2006)

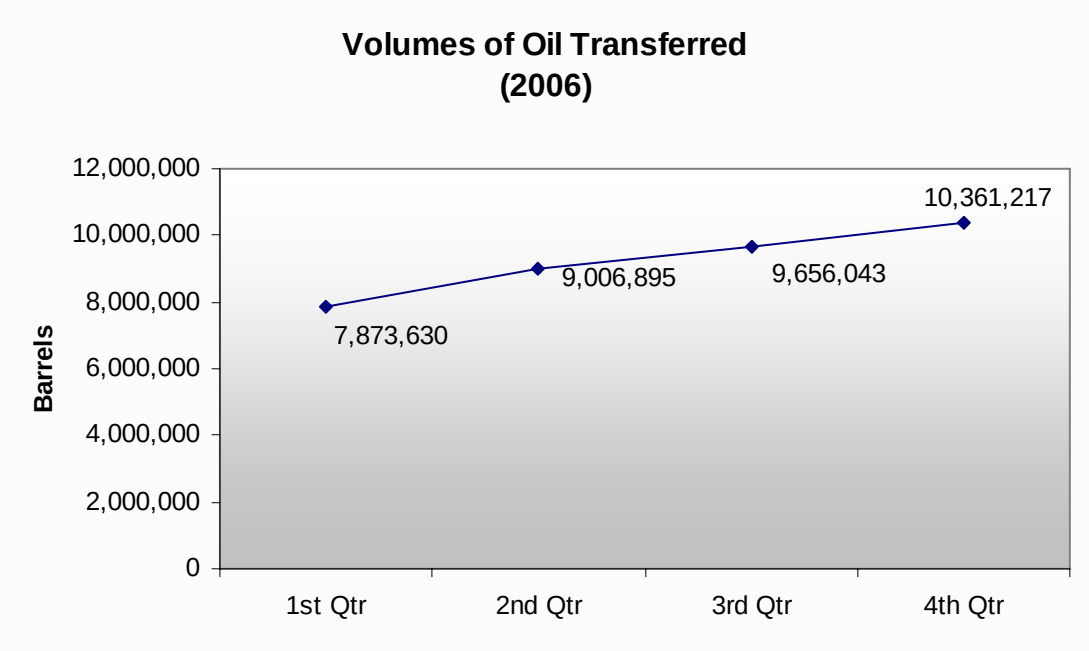


There was a decrease of 8.41% in the aggregate of number of voyages in 2006 when compared with the data of 2005. In comparison of the data of 2006 with the data of 2004 there was increase of 4.38% in number of voyages in 2006.

The number of voyages for products followed the trend of the aggregate. The voyages of crude oil showed a consistent trend.

VOLUME OF OIL TRANSFERRED (2006)

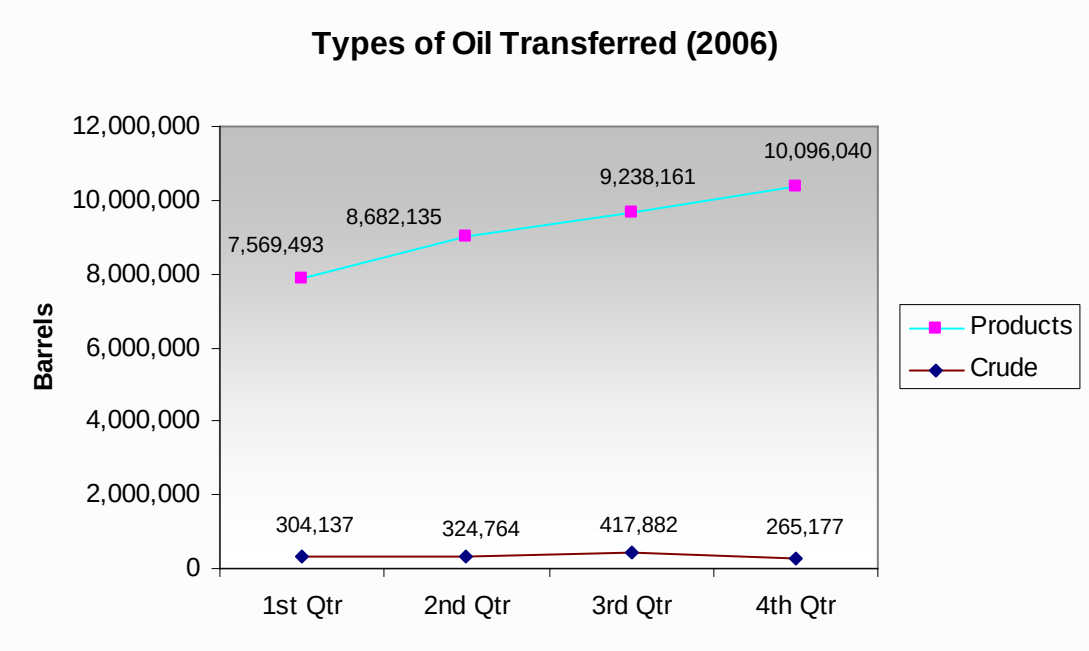
Total Volume:	36,897,789 barrels
Crude Oil:	1,311,960 barrels
Refined Oil:	35,585,829 barrels



During 2006, all of the oil transported between the ports of the San Francisco Bay area and the Los Angeles/Long Beach area was refined products. No crude oil was shipped directly between these areas.

All internal shipments of crude oil in 2006 were from the Ellwood marine terminal, off the Coast of Santa Barbara County.

TYPE OF OIL TRANSFERRED (2006)

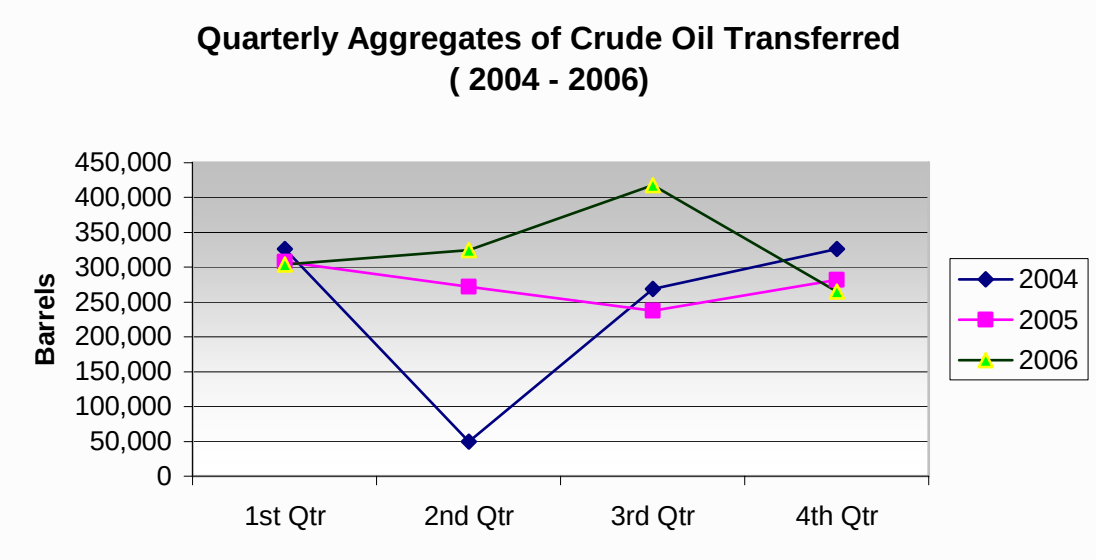


Products: The maximum volume was transferred during the fourth quarter at 10,096,040 barrels and the least volume was transferred during first quarter at 7,569,493 barrels.

Crude Oil: The maximum volume of crude oil transfer in the third quarter at 417,882 barrels and minimum during the first quarter at 304,137 barrels.

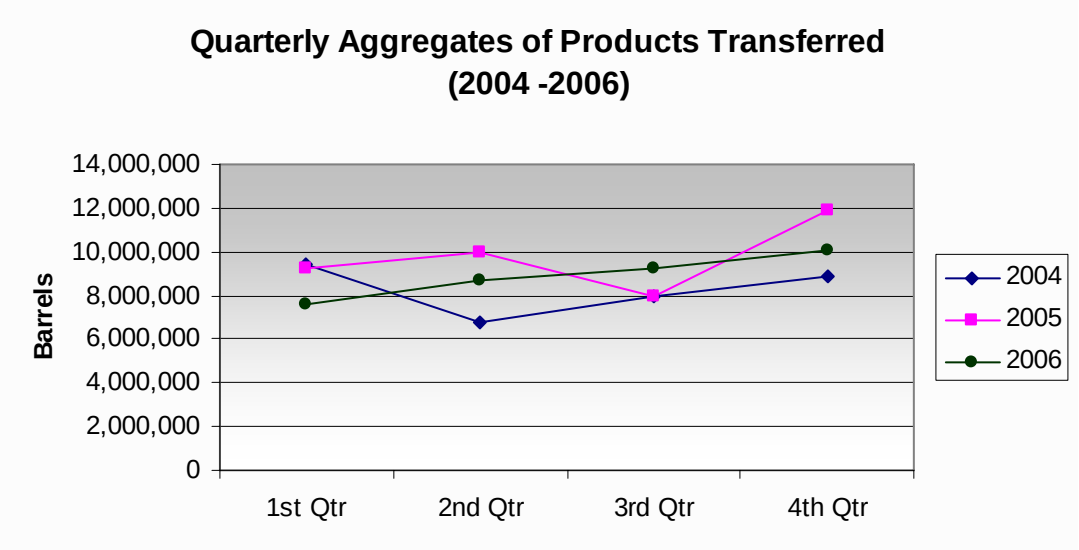
The pattern indicates that refined products volumes had a progressively rising trend in 2006. The crude oil volumes are showing a falling trend.

QUARTERLY AGGREGATES OF CRUDE OIL (2004-2006)



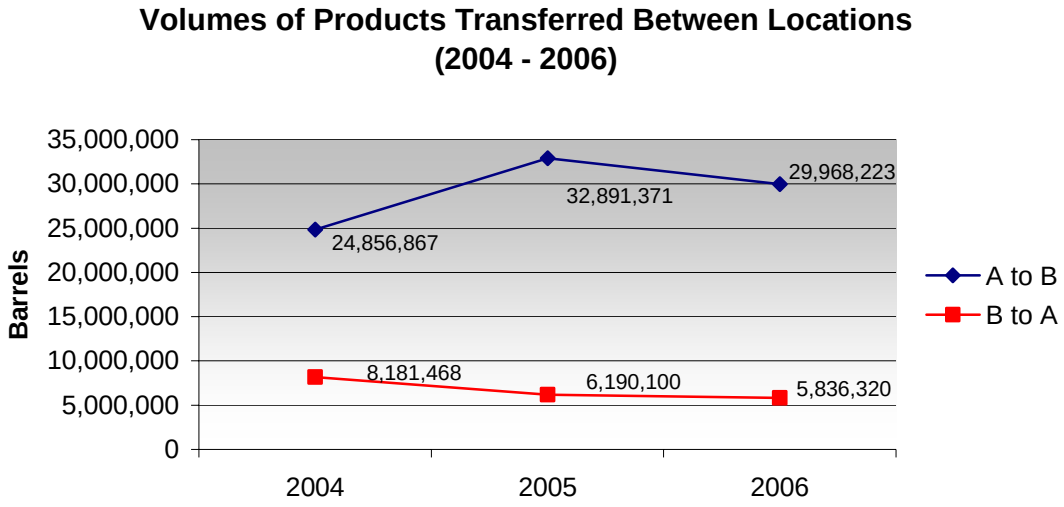
No conclusive patterns or trends can be determined from the data.

QUARTERLY AGGREGATES OF PRODUCTS (2004-2006)



More volumes of products are transferred in the fourth quarter of each year.

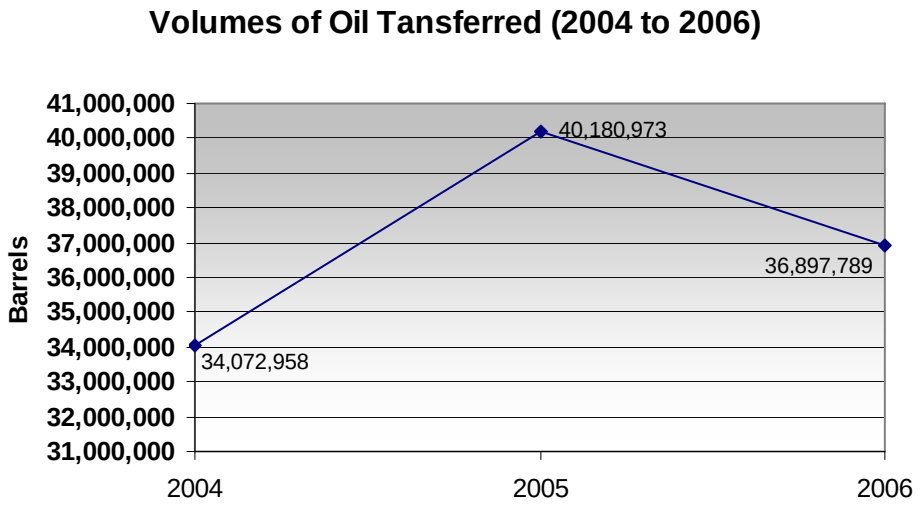
VOLUMES OF PRODUCTS TRANSFERRED BETWEEN LOCATIONS (2004-2006)



A to B: San Francisco Bay area to Los Angeles/Long Beach
B to A: Los Angeles/Long Beach to San Francisco Bay area

The trend indicates that there are higher volumes of products transferred from San Francisco Bay area to Los Angeles/Long Beach area and comparatively lower volumes transferred from Los Angeles/Long Beach area to San Francisco Bay area. This could be due to greater refining capacity in the Bay area in comparison to the refining capacity in Los Angeles/Long Beach area.

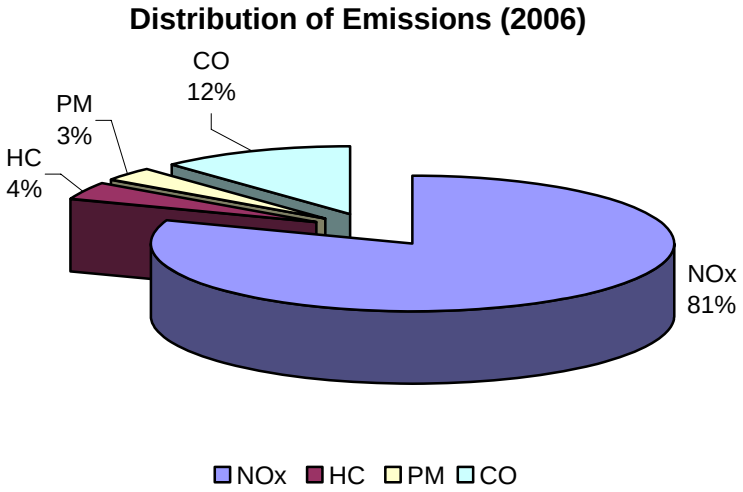
VOLUME OF OIL TRANSFERRED (2004-2006)



A comparison of volumes of 2006 with 2005 shows a reduction of 3,283,184 barrels, a fall of 8.17%. The comparison of volumes of years 2005 with 2004 shows there were 6,108,015 barrels more transferred by internal shipments in 2005. This was a rise of 17.93% in 2005 over the previous year. The comparison of volumes of years 2006 with 2004 shows there was a higher volume of 2,824,827 barrels shipped in 2006. This was an increase of 8.29% over the volume of 2004.

AIR EMISSIONS

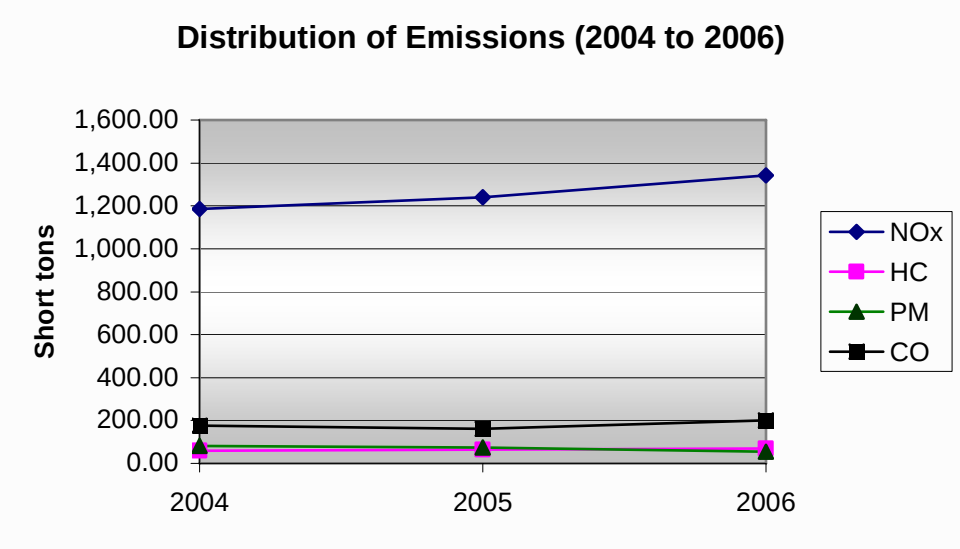
DISTRIBUTION OF EMISSIONS IN 2006



Nitrogen Oxide (NO_x) was 81% of the total emissions, followed by Carbon Monoxide (CO) at 12%. Hydrocarbon (HC) gases and Particulate Matter (PM) remained at 4 and 3% of the total emissions respectively.

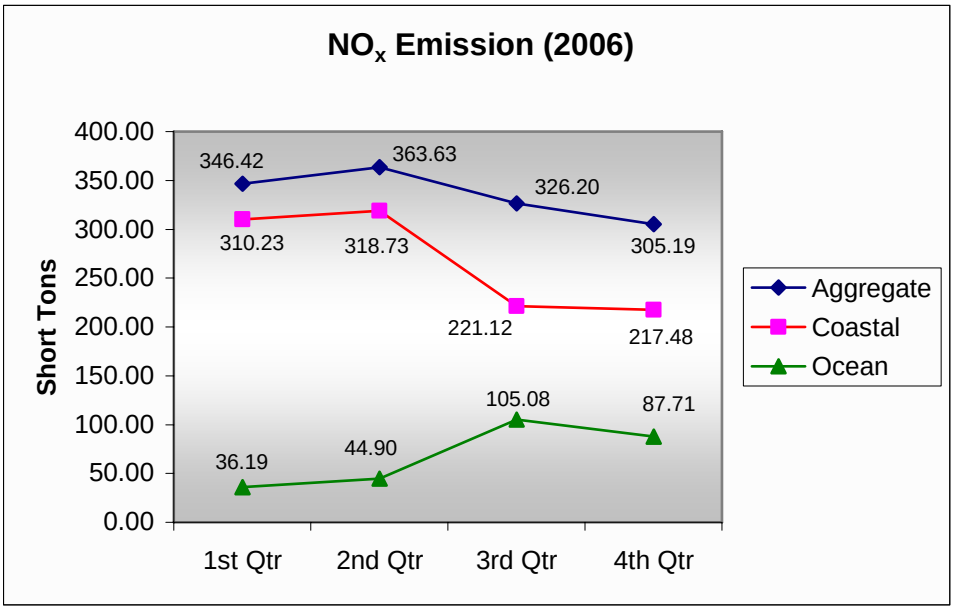
NO_x emission:	1,341.44 short tons or 81% of total emissions
HC emissions:	68.55 short tons or 4% of total emissions
PM emissions:	55.44 short tons or 3% of total emissions
CO emissions:	199.75 short tons or 12% of total emissions

DISTRIBUTION OF EMISSIONS (2004 to 2006)



The CO, HC and NO_x have shown an upward trend. PM has shown a declining trend.

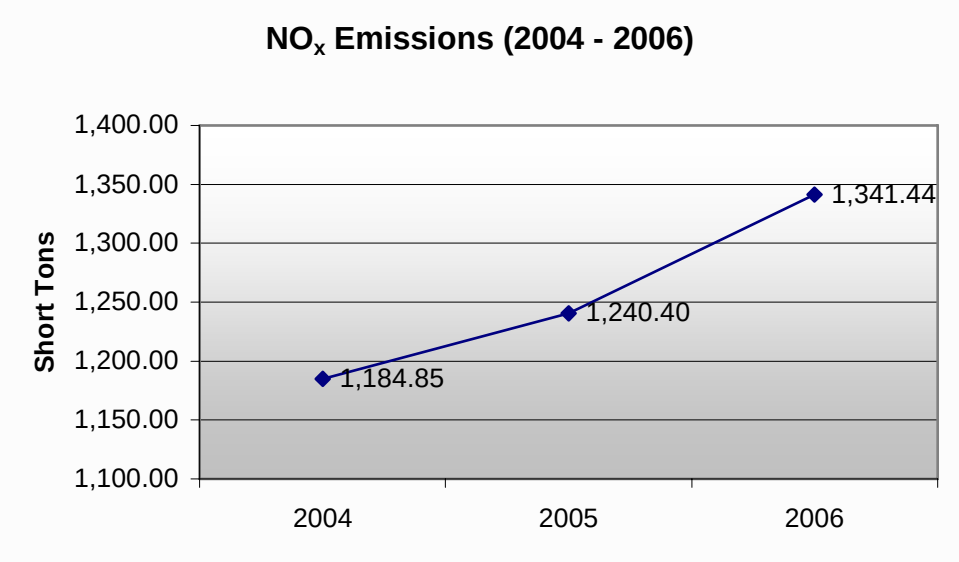
NITROGEN OXIDE (NO_x) EMISSIONS (2006)



The aggregate NO_x emissions were the highest in the second quarter during which there were 99 internal shipments of oil, 2 shipments less than the fourth quarter, which had relatively lesser No_x emissions. However there were 93 shipments by barges and only 6 by tank ships in the second quarter. The least quarterly emissions occurred during the fourth quarter, when there was relatively higher number of voyages than any other quarter.

A plausible reason for reduction of NO_x, in the fourth quarter was that tugs which tow barges had started using cleaner fuels with sulfur content not more than 0.5% by weight of sulfur. Title 13, California Code of Regulations, § 2299.1(e)(A), requires use of low sulfur fuels for auxiliary engines, effective January 1, 2007. Many tugs find technical difficulty in managing more than one grade of fuel, so many have begun using a common low sulfur fuel. However, data is not reported that could verify this hypothesis.

NITROGEN OXIDE (NO_x) EMISSIONS (2004-2006)

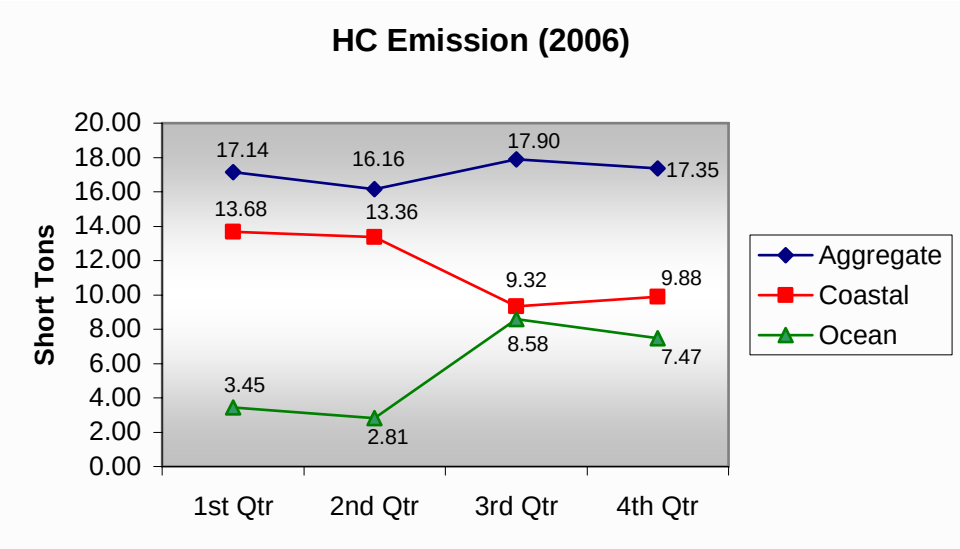


The comparison of data of the years 2006 with 2005 indicates an increase of 8.15% in NO_x emissions with the decrease of 8.41% in the number of voyages. The comparison of data of the year 2006 with 2004 shows there was 13.22% increase in No_x with 4.38% increase in number of voyages. The generation of No_x has been following a rising trend on year to year comparison.

The table below indicates the average of NO_x emission per voyage in short tons since the program commenced in 2004.

Type of Voyage	Year 2004	Year 2005	Year 2006
Ocean Voyage	4.33	2.32	2.91
Coastal Voyage	2.39	3.30	3.72

HYDROCARBON (HC) EMISSIONS (2006)

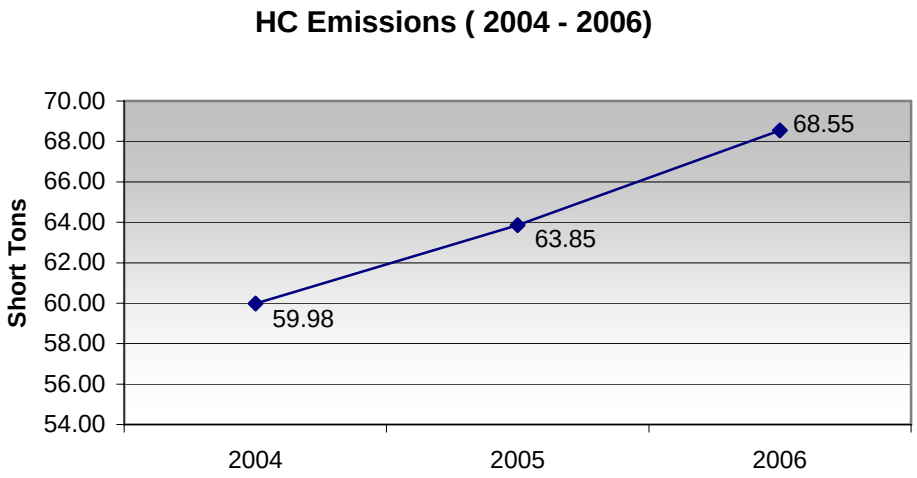


The aggregate HC emissions were the highest in the third quarter in which there were 93 internal shipments of oil, 8 shipments less than the fourth quarter, which had relatively lesser HC emissions. The least quarterly emissions occurred during the second quarter, when there were 99 internal shipments, 6 shipments more than the third quarter. There were only 6 voyages by tank ships during the second quarter. This number was lower than any other quarter. A plausible reason for lower HC emissions in second quarter could be that tank ships generate more HC emissions than barges. Fewer tank ship voyages may have led to lower HC emissions in the second quarter.

The table below indicates the average of HC emission per voyage in short tons since the program commenced in 2004.

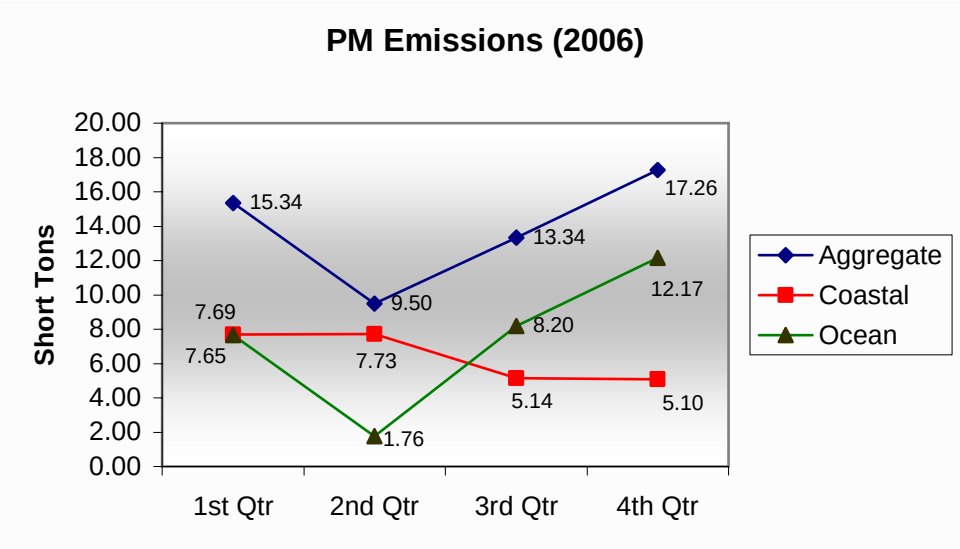
Type of Voyage	Year 2004	Year 2005	Year 2006
Ocean Voyage	0.24	0.19	0.24
Coastal Voyage	0.13	0.29	0.49

HYDROCARBON (HC) EMISSIONS (2004-2006)



The comparison of data of the years 2006 and 2005 indicates an increase of 7.36% in HC emissions with the decrease of 8.41% in the number of voyages. The comparison of data of the year 2006 with 2004 shows there was 14.30% increase in HC with 4.38% increase in number of voyages. The generation of HC has been following a rising trend on year to year comparison.

PARTICULATE MATTER (PM) EMISSIONS (2006)

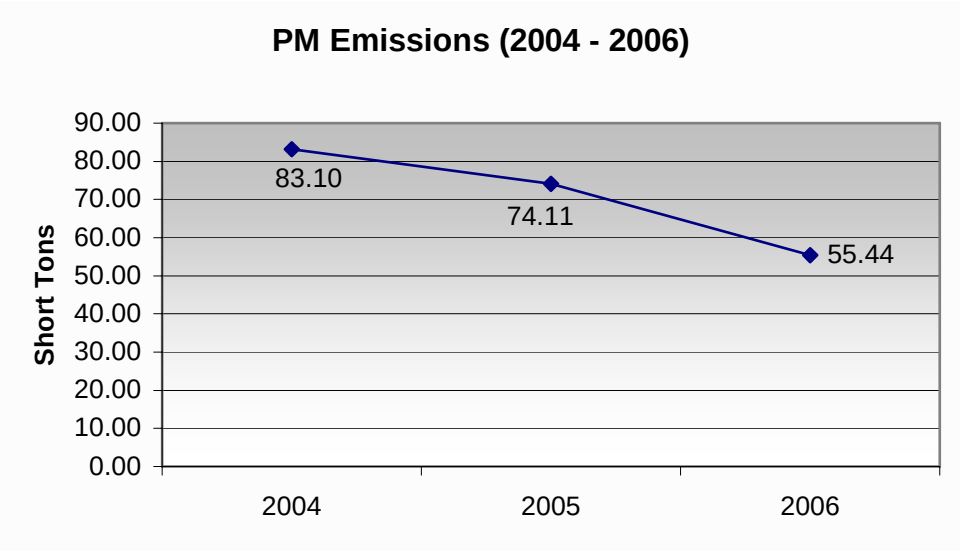


PM emissions were highest in the fourth quarter and lowest in the second quarter. The PM emissions in first quarter were almost the same from vessels using coastal and ocean voyage. In the first quarter there were 14 ocean voyages and 74 coastal voyages. During the second quarter there were 17 ocean voyages and 82 coastal voyages. In the second quarter the emissions from ocean voyages were significantly less than the coastal voyages. In the third and fourth quarter PM emissions from vessels using ocean voyages were higher than from vessels using coastal voyages. Generally, tank ships and integrated tug barges that sail offshore ocean voyages appear to generate more PM emissions than tugs/barges sailing closer to the shore.

The table below indicates the average of PM emission per voyage in short tons since the program commenced in 2004.

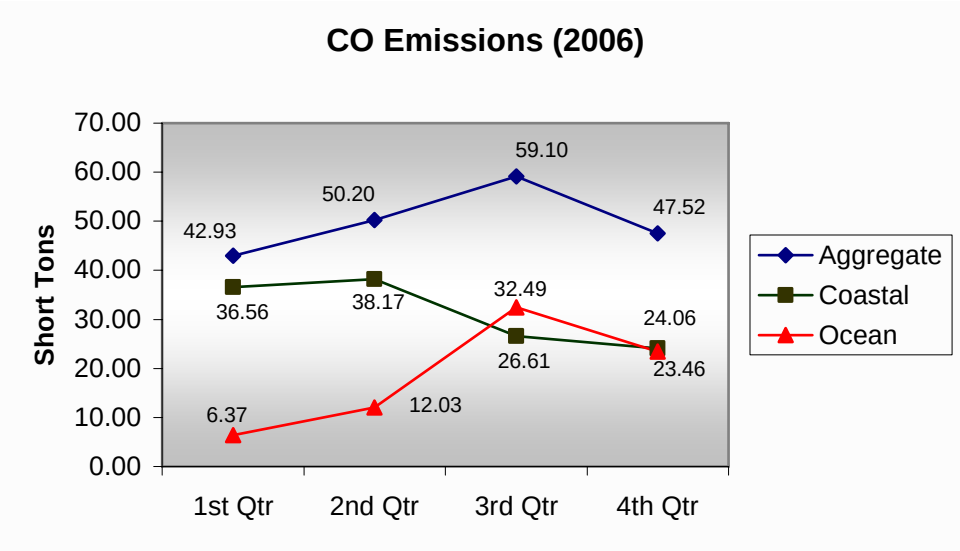
Type of Voyage	Year 2004	Year 2005	Year 2006
Ocean Voyage	0.35	0.39	0.32
Coastal Voyage	0.33	0.08	0.09

PARTICULATE MATTER (PM) EMISSIONS (2004-2006)



The comparison of data of the years 2006 and 2005 indicates a drop of 25.20% in PM emissions with the decrease of 8.41% in the number of voyages. The comparison of data of the year 2006 with 2004 shows there was 33.28% drop in PM with 4.38% increase in number of voyages. The generation of PM has been following a falling trend. Again, the plausible reason of falling trend could be that more internal shipments are taking place by barges which are towed by tugs that have gradually been switching over to cleaner fuels.

CARBON MONOXIDE (CO) EMISSIONS (2006)

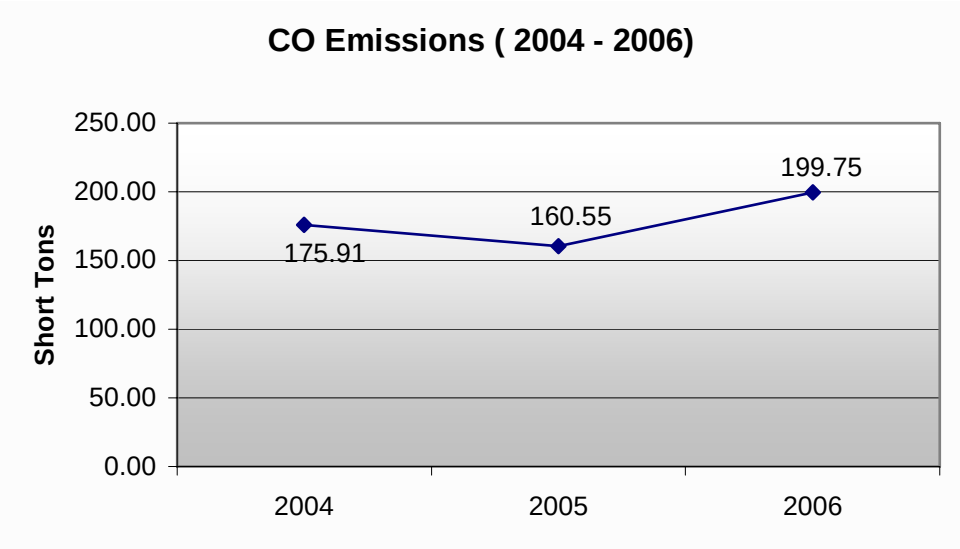


CO emissions were highest in the third quarter and lowest in the first quarter. In the first quarter there were 14 ocean voyages and 74 coastal voyages. During the second quarter there were 17 ocean voyages and 82 coastal voyages. In the first and second quarters, the emissions from ocean voyages were significantly less than from the coastal voyages. In the third quarter, CO emissions from vessels using ocean voyages were higher than from vessels using coastal voyages. In the fourth quarter, the emissions both from ocean and coastal voyages were almost equal. No pattern is emerging on the emission of the CO.

The table below indicates the average of per voyage CO emission in short tons since the program commenced in 2004.

Type of Voyage	Year 2004	Year 2005	Year 2006
Ocean Voyage	0.67	0.39	0.79
Coastal Voyage	0.33	0.39	0.44

CARBON MONOXIDE (CO) EMISSIONS (2004-2006)



The comparison of data of the years 2006 and 2005 indicates an increase of 24.42% in CO emissions with the drop of 8.41% in the number of voyages. The comparison of data of the year 2006 with 2004 shows there was 13.55% increase in CO with 4.38% rise in number of voyages. CO emissions are showing a rising trend on year to year comparison.

PERTINENT ISSUES

The marine transportation sector has traditionally used blends of intermediate residual oils after the lighter distillates have been taken for non-marine sector. This left higher concentration of sulfur and organic compounds in the blend of residual oils used in the marine sector. The marine transportation sector needs fuels that are low in sulfur, organic compounds and burn more efficiently. Title 19, California Code of Regulations § 2299.1(e)(A) requires use of low sulfur diesel for auxiliary engines effective January 1, 2007. Harbor craft in California now use diesel fuels used in the land transportation sector, both for propulsion and auxiliary engines.

The U.S. Environmental agency has published rule on emission standard of marine diesel engines of less than 30 liters per cylinder. The emission standard for larger marine engines is under development.

There are technical limitations when introducing new fuels in existing, very large marine engines used in oceangoing vessels. The marine engines have a life span of 25 years. The engines that can use more environmentally friendly fuels are in the process of development. Until new marine engines are developed and installed on vessels, use of suitable cleaner fuel and reduction of speed up to a reasonable distance from port would provide some reduction in emissions.

The idling time of vessels in ports could be reduced by better planning of berths, so that vessels berth as soon as possible after arrival.

CONCLUSION

This is the third in a series of annual reports to the California State Legislature.

The first report included statistics of the number of internal shipments, the quantities of crude oil and refined products, the numbers of coastal and offshore voyages and the quantities of No_x, HC, PM and CO emissions into the coastal and offshore regions off California for the year 2004. Prior to the first report, the information collected by the OTTER Program did not exist. Starting with the report of 2005, planning organizations, State and Federal Agencies and organizations developing information, particularly for environmental documentation, will have a much more complete picture of the movement of oil along the California coast and its quarterly and annual trends. Continued collection of OTTER information will allow future reports to look at trends and changes in oil transportation, estimates of vessel air emissions along our central coast and will allow planners to examine the impacts of moving oil by marine vessels.

More shipments are taking place by barges and 75% of shipments take place 12 to 15 miles from the coast. There were no shipments as result of refinery shutdown.

APPENDIX A: THE OIL TRANSFER AND TRANSPORTATION EMISSION AND RISK REDUCTION ACT OF 2002

(AB 2083)

8780 THROUGH 8789, PUBLIC RESOURCES

LEGISLATIVE COUNSEL'S DIGEST

AB 2083, Jackson. Public resources: oil spill prevention and response. Existing law establishes oil spill prevention, inspection, response, containment, and cleanup programs.

This bill would require the State Lands Commission to develop a form that is to be completed by the responsible party, as defined, engaged in the internal shipment of oil. The form would be designed to enable the commission to obtain and track the amount and type of oil transported, as well as the name of the vessel, the vessel's route, and air emissions relating to the internal shipment of that oil.

The bill would require the commission, on or before April 1 of each year, for the calendar years 2004 to 2009, inclusive, to file a report with the Legislature summarizing certain information and transmit a copy of the report to any interested agency or member of the public, upon request.

The bill would require the commission to consult with the administrator for oil spill response, other state agencies, and agencies of the federal government, including the United States Coast Guard and the federal Department of Transportation, to the maximum extent feasible, before undertaking actions under these provisions.

The bill would require the administrator to reimburse the commission for the costs of administering these provisions from the Oil Spill Prevention and Administration Fund.

These provisions would be repealed on January 1, 2010.

DIVISION 7.9. OIL TRANSFER AND TRANSPORTATION EMISSION AND RISK REDUCTION ACT OF 2002

8780. This division shall be known and may be cited as the Oil Transfer and Transportation Emission and Risk Reduction Act of 2002.

8781. The Legislature finds and declares all of the following:

(a) Thirty years ago the people of California passed the California Coastal Zone and Conservation Act of 1972 after a disastrous oil spill that affected hundreds of miles of coast and severely affected the coastal economy.

(b) A clean and healthy coastal environment is critical to maintaining a vibrant coastal economy, including opportunities for sustainable fisheries, flourishing tourism, and healthy recreation.

(c) The coastal communities contribute billions of dollars and hundreds of thousands of jobs to the state economy.

(d) Much of the oil extracted off California's coast is highly viscous, the refining of which results in heavy byproducts such as fuel oil and coke, which tend to be shipped to overseas markets. The storage and shipment of such byproducts will also have air quality impacts.

(e) There is significant internal shipment of oil by vessel between the San Francisco Bay area and the Los Angeles area.

(f) Although vessels transporting oil are eventually required to be double hulled, this will not be completed until January 1, 2015.

(g) The thousands of sea birds that have been injured or killed in 2001 and 2002 by oil leaking from a freighter that sank off California's coast in 1953 are a strong reminder of the serious consequences of vessel mishaps.

(h) One of the results of vessel traffic along the central coast and into the ports of the Los Angeles and San Francisco areas is tons of oxides of nitrogen emitted into the air each day, which could negate efforts made on land to meet federal ozone standards and other public health air quality goals.

(i) Current, accessible and accurate data regarding oil transportation is critical to having adequate information of the potential environmental quality, public health, and environmental justice consequences that must be analyzed by state and local agencies for environmental impact reports and statements, emergency response planning, permit issuance, and air quality mitigation efforts.

(j) Tracking trends in internal shipment of oil is necessary to promote public safety, health, and welfare, and to protect public and private property, wildlife, marine fisheries, and other ocean resources, and the natural environment in order to protect and to preserve the ecological balance of California's coastal zone, coastal waters, and coastal economy.

8782. Unless the context requires otherwise, the following definitions govern the construction of this division:

(a) "Administrator" means the administrator for oil spill response appointed by the Governor under Section 8670.4 of the Government Code.

(b) "Barge" means any vessel that carries oil in commercial quantities as cargo but is not equipped with a means of self-propulsion.

(c) "Commission" means the State Lands Commission.

(d) "Internal shipment of oil" means the loading, transporting by vessel, and offloading of oil that originates and terminates at the San Francisco Bay area and the Los Angeles and Long Beach area, or points in between. Internal shipment of oil does not include lightering, as defined in paragraph (4) of subdivision (l) of Section 790 of Title 14 of the California Code of Regulations.

(e) "Marine facility" means any facility of any kind, other than a vessel, that is or was used for the purpose of exploring for, drilling for, producing, storing, handling, transferring, processing, refining, or transporting oil and is located in marine waters, or is located where a discharge could impact marine waters, unless the facility (1) is subject to Chapter 6.67 (commencing with Section 25270) or Chapter 6.75 (commencing with Section 25299.10) of Division 20 of the Health and Safety Code or (2) is placed on a farm, nursery, logging site, or construction site and does not exceed 20,000 gallons in a single storage tank. A drill ship, semi submersible drilling platform, jack-up type drilling rig, or any other floating or temporary drilling platform is a "marine facility." A small craft refueling dock is not a "marine facility."

(f) "Marine terminal" means any facility used for transferring oil to or from tankers or barges. A marine terminal includes all piping not integrally connected to a tank facility as defined in subdivision (k) of Section 25270.2 of the Health and Safety Code.

(g) "Oil" means any kind of petroleum, liquid hydrocarbons, or petroleum products or any fraction or residues therefrom, including, but not limited to, crude oil, bunker fuel, gasoline, diesel fuel, aviation fuel, oil sludge, oil refuse, oil mixed with waste, and liquid distillates from unprocessed natural gas.

(h) "Operator," when used in connection with a vessel means any person or entity that owns, has an ownership interest in, charters, leases, rents, operates, participates in the operation of, or uses, that vessel.

(i) "Person" means an individual, trust, firm, joint stock company, or corporation, including, but not limited to, a government corporation, partnership, or association. "Person" also includes any city, county, city and county, district, commission, the state or any department, agency, or political subdivision thereof, and the federal government or any department or agency thereof to the extent permitted by law.

(j) "Responsible party" or "party responsible" means the "Responsible party" or "Party responsible" means the owner of the oil or a person or entity who accepts responsibility for the oil for purposes of this division.

(k) "Tanker" means any self-propelled, waterborne vessel, constructed or adapted for the carriage of oil in bulk or in commercial quantities as cargo.

(l) "Vessel" means a tanker or barge as defined in this section.

8783. (a) The commission shall develop a form that is to be completed by the responsible party engaged in the internal shipment of oil. The form shall be known as the "Oil Transfer and Transportation Emission and Risk Reduction Form." The form shall be designed to enable the commission to obtain and track the amount and type of oil transported, as well as the name of the vessel, the vessel's route, and air emissions relating to the internal shipment of that oil.

(b) The form shall contain, but need not be limited to, all of the following information:

(1) The name, address, point of contact, and telephone number of the responsible party.

(2) The name of the vessel transporting the oil.

(3) The type and amount of oil being transported.

(4) The source of crude oil.

(5) The name and location of any terminal that loaded the vessel.

(6) The name and location of any terminal that discharged the tanker or barge.

(7) The dates of travel and the route.

(8) The type of engine and fuel used to power the tanker or barge-towing vessel.

(9) The estimated amount and type of air emissions. To the extent practicable, the emissions factors developed by the United States Environmental Protection Agency shall be used to estimate the amount of air emissions. The form shall be designed to ensure that charter vessel air emissions are not counted more than once.

(10) An indication of whether the reason for the internal shipping of oil was due to a temporary shutdown or partial shutdown of a key refinery facility.

(11) On and after January 1, 2004, if Division 36 (commencing with Section 71200) is repealed pursuant to Section 71271, the amount of any ballast discharge and the location of the discharge.

(c) The form shall be filed with the commission on a quarterly basis by the responsible party engaged in the internal shipment of oil for the activities of the preceding quarter.

(d) In developing the form and the reporting process, the commission shall consult with the interested parties including operators, responsible parties, and the International Maritime Organization.

8784. (a) On or before April 1 of each year, for the calendar years 2004 to 2009, inclusive, the commission shall file a report with the Legislature summarizing the information and including all of the following:

(1) A description of any trends in the total number of trips by oil type, amount of shipment, and source of oil.

(2) The number of transfers due to refinery shutdowns.

(3) The location of air emissions and ballast discharge, and the type of vessel used during those events.

(4) A discussion of any other pertinent issues that the commission determines should be included.

(b) The commission shall transmit a copy of the report to any interested agency or member of the public, upon request.

8785. The commission shall consult with the administrator, other state agencies, and agencies of the federal government, including, but not limited to, the United States Coast Guard and the federal Department of Transportation, to the maximum extent feasible, before undertaking actions under this division.

8786. The administrator shall reimburse the commission for the costs of administering this division from the Oil Spill Prevention and Administration Fund, pursuant to paragraph (8) of subdivision (e) of Section 8670.40 of the Government Code.

8787. This division applies to all terminals, pipelines, vessels, and activities in the state, whether on lands that has been granted by the Legislature to local governments or on lands that remain un-granted.

8788. Any information collected under this division for the purpose of explaining why oil was transferred shall be kept confidential and reported only in the aggregate by the commission, in a manner that protects the competitive nature of the information.

8789. This division shall remain in effect only until January 1, 2010, and as of that date is repealed, unless a later enacted statute, which is enacted before January 1, 2010, deletes or extends that date.

SEC. 3. Section 1.5 of this bill incorporates amendments to Section 8670.40 of the Government Code proposed by both this bill and SB 849. It shall only become operative if (1) both bills are enacted and become effective on or before January 1, 2003, (2) each bill amends Section 8670.40 of the Government Code, and (3) this bill is enacted after SB 849, in which case Section 1 of this bill shall not become operative.

APPENDIX B: THE OIL TRANSFER AND TRANSPORTATION EMISSION AND RISK REDUCTION FORM

OIL TRANSFER AND TRANSPORTATION EMISSION AND RISK REDUCTION FORM

Public Resources Code - Sections 8780 through 8789
1/1/2004
Submission Date:

Name of Vessel/Barge	IMO/Vessel ID No.

Name of Loading Terminal	Location
1.	
2.	
3.	

Cargo Transported	Quantity (BBLS)	Source (Crude only)
1.		
2.		
3.		

Name of Discharge Terminal	Location
1.	
2.	
3.	

Dates of Travel				
Departure	Time	Route	Arrival	Time

Engine Type (Tanker)	Engine Type (Barge/Tug)	Engine Fuel

Engine Air Emissions (g/kw-hr)			
NO_x	HC	PM	CO

Was the reason for shipping this cargo due to a temporary or partial shutdown of a key refinery facility?	Yes ☐	No ☐

Point of Contact	
Address	
Telephone No.	
Signature of Responsible Party	

INSTRUCTIONS

1. The responsible party of an "internal shipment" {Public Resources Code §8782(d)} of oil from either the San Francisco Bay area or Los Angeles/Long Beach areas or ports in between shall be responsible for filing the form with the California State Lands Commission's Marine Facilities Division. As provided by Public Resources Code §8788, the information provided by the responsible party through the form shall be kept confidential and reported only in the aggregate by the Commission, as provided by Public Resources Code §8784, in a manner that protects the competitive nature of the information.

2. **Loading Terminal** - The name of each terminal loading an internal shipment of oil.

3. **Location of Terminal** - Either 'A' - San Francisco Bay area; 'B' - Los Angeles/Long Beach area; or 'C' - name of port if not 'A' or 'B'.

4. **Cargo Transported** - Types indicated in broad categories, such as: CRUDE OIL, REFINED OIL, or OTHER (please specify).

5. **Source** - The source or origin of oil should be entered only if the oil shipped is crude oil.

6. **Dates of Travel** - The date and time of departure from the last loading terminal in areas 'A' or 'B' or 'C' *(see 3. above)* and the date and time of arrival at the first discharge terminal of the internal shipment.

7. **Route** - 'S' - Standard route using the Santa Barbara Channel Traffic Separation Schemes; 'O' - Offshore route at least 25 miles from the coastline; if neither 'S' nor 'O', a brief explanation.

8. **Engine Type** - The types of engines for main propulsion. Types include INTERNAL COMBUSTION, GAS TURBINE and STEAM.

9. **Engine Fuel** - The type of fuel used by the tanker or tug, e.g., DIESEL, FUEL OIL, HEAVY FUEL OIL, BUNKER 'C' or GAS OIL.

10. **Air Emissions** - For estimating air emissions, use either individual vessel emission factors or those found in USEPA's Document "Compilation of Air Pollutant Emission Factors, AP-42." Reported emissions are for main propulsion unit only and for the transit time of vessel or barge.

11. **The responsible party should submit completed forms by mail or fax within 45 days of the end of each calendar quarter to: California State Lands Commission, Marine Facilities Division, 200 Oceangate, Suite 900, Long Beach, CA 90802. Fax (562) 499-6317.**

APPENDIX C: ADDENDUM TO 2005 OTTER ANNUAL REPORT

ADDENDUM TO 2005 OTTER ANNUAL REPORT

Summary of additional 2005 fourth quarter internal shipments reported on May 22, 2006.

Total number of internal voyages reported late:	13
Number of barge/tug voyages from SF Bay area to LA/LB	12
Number of barge/tug voyages from LA/LB to SF Bay area	1

There was no tanker shipments reported

Total volume of crude oil shipped	0 bbls
Total volume of refined oil shipped	718,640 bbls

Total air emissions resulting from 13 internal shipments:

NO_x emissions:	53.787 short tons
HC emissions:	1.603 short tons
PM emissions:	0.997 short tons
CO emissions:	4.457 short tons

ANNUAL OTTER REPORT 2005 ADDENDUM

ITEMS	AGGREGATES REPORTED IN 2005 REPORT	ADDITIONAL INFORMATION (Late Reports)	CORRECTED AGGREGATES FOR 2OO5
Total number of internal shipments of oil	403	13	416
Number of internal shipments by tanker	84	0	84
Number of internal shipments by barge/tug	319	13	332
Number of barrels of crude oil shipped	1,099,502	0	1,099,502
Number of barrels of refined oil shipped	38,362,831	718,640	39,081,471
Number of barrels of other oil shipped	0	0	0
Total NO_x emissions in short tons	1186.61	53.787	1240.397
Total HC emissions in short tons	62.24	1.603	63.843
Total PM emissions in short tons	73.11	0.997	74.107
Total CO emissions in short tons	156.10	4.457	160.557
NO_x emissions 25 miles from coastline in short tons	308.93	0	308.93
NO_x emissions 12 to 15 miles from coastline in short tons	877.68	53.787	931.467
HC emissions 25 miles from coastline in short tons	25.00	0	25.00
HC emissions 12 to 15 miles from coastline in short tons	37.24	1.603	38.843
PM emissions 25 miles from coastline in short tons	51.25	0	51.25
PM emissions 12 to 15 miles from coastline in short tons	21.86	0.997	22.847
CO emissions 25 miles from coastline in short tons	51.75	0	51.75
CO emissions 12 to 15 miles from coastline in short tons	104.34	4.457	108.797
No. of internal shipments because of refinery breakdowns	0	0	0

PERCENTILE INCREASES

ITEMS	ORIGINAL 2005 REPORTED DATA	CORRECTED DATA	INCREASE (%)
Number of voyages	403	416	3.23
Tanker voyages	84	84	0
Barge voyages	319	332	4.08
SF Bay area to LA/LB voyages (A to B)	299	311	4.01
LA/LB to SF Bay area voyages (B to A)	80	81	1.25
Gross volume of oil transferred (Crude + Refined)	39,462,333	40,180,973	1.82
Volume of Crude Oil transferred (BBLS)	1,099,502	1,099,502	0
Volume of Refined Oil Transferred (BBLS)	38,362831	39,081,471	1.87
Volume of oil transferred A to B	32,224,778	32,891,371	2.07
Volume of oil transferred B to A	6,138,053	6,190,100	0.85
Coastal voyages (S route)	269	282	4.83
Ocean voyages (O route)	133	133	0
Gross NO_x emissions	1,186.61	1,240.397	4.53
NO_x emissions 12 to 15 miles from coastline	877.68	931.467	6.13
NO_x emissions 25 miles from coastline	308.93	308.93	0
Gross HC emissions	62.24	63.84	2.57
HC emissions 12 to 15 miles from coastline	37.24	38.84	4.30
HC emissions 25 miles from coastline	25.0	25.0	0
Gross PM emissions	73.11	74.11	1.36
PM emissions 12 to 15 miles from coastline	21.86	22.86	4.56
PM emissions 25 miles from coastline	51.25	51.25	0
Gross CO emissions	156.10	160.55	2.85
CO emissions 12 to 15 miles from coastline	104.34	108.8	4.27
CO emissions 25 miles from coastline	51.75	51.75	0